

REMARKS

Claims 1 - 20 are now in this application. Claims 1 - 10 are rejected. New claims 11 - 20 are added to clarify the invention and to express the invention in alternative wording.

In the Office Action, claims 1 - 10 were rejected under 35 U.S.C. 103(a) as being unpatentable over the reference cited by Applicant in the application at pages 1 and 2 thereof (i.e., Japanese Patent document 11-262862, hereinafter "JP '862"), in view of U.S. Patent 6,722,949 to Hu et al ("Hu"), U.S. Patent 6,641,462 to Eaton ("Eaton"), and U.S. Patent 6,413,149 to Wada et al ("Wada").

The Examiner indicates that JP '862, as also shown in Fig. 5 (Prior Art) of the present application, discloses all of the structural elements and features of the apparatus according to the present application, except for means for pressurizing the slurry, a slurry supply tube and a water slurry tube through a rotating shaft, or electromagnetic valves.

The Examiner contends that Hu discloses a system having a pump for delivering a pressurized slurry; a plurality of two- and three-way valves, and a controller for receiving a control signal; Eaton discloses a system having a slurry supply tube and a coolant supply tube through a rotating shaft; and Wada discloses the use of electromagnetic valves in a polishing fluid circuit to control flow.

From the foregoing, the Examiner has concluded that it would have been obvious to a person of ordinary skill in the art at the time the present invention was made to have modified the apparatus of JP '862 by incorporating therein the specific features of the Hu, Eaton, and Wada references for which they have individually been cited, as discussed above, in order to arrive at an apparatus that is identical to that as claimed according to the claims in the present application.

Applicant respectfully disagrees with the Examiner's analysis of the apparatus of JP '862 and the other cited references, namely, Hu, Eaton, and Wada, and the conclusion of obviousness of the apparatus of the present application over JP '862 in combination with one or more of the other three references.

With regard to the apparatus of JP '862, Applicant points out that this apparatus represents the previous state of the art, prior to the present application, wherein the slurry that is fed to a workpiece flows as a result of gravity flow feed, and is not pressurized as is the slurry feeding unit of the apparatus of the present application.

With regard to Hu, Applicant submits that this reference discloses a slurry feeding system wherein a gas is mixed with the slurry and the mixed slurry is provided to the abrading machine. Although the slurry is mixed with a gas, the combined mixed slurry-gas stream is not pressurized, as is accomplished by the pressurized slurry feeding unit of the apparatus of the present application.

Accordingly, even if Hu were combined with JP '862, and there is nothing in either of the references themselves to suggest to a person of ordinary skill in the art to do so, the apparatus resulting from the combination would still be different from that of the present application in that the slurry feed unit would not be pressurized.

With regard to Eaton, Applicant submits that this reference discloses the use of separate tubes for feeding slurry and for feeding refrigerant, both of which tubes extend through a rotary shaft. The slurry feed tube communicates with holes in an abrasive plate, such that all holes are fed by the slurry and the amount of slurry being fed to the holes cannot be regulated. The apparatus of the present application is completely different from this in that it does not provide for feed of a refrigerant. In certain embodiments of the apparatus of the present application, a valve in each of the slurry supply paths, supplying slurry to the slurry feed holes in the upper abrasive plate, and a control unit for the valves are provided to control which slurry paths and holes are fed with slurry in any given situation, depending on the size and shape of the workpiece being abraded, and to control and vary the amount of slurry being fed to each active slurry hole, both as a function of position and time in the abrading process. Therefore, even if the apparatus of Eaton were combined with that of JP '862, and there is nothing in either of the references themselves that would suggest such a combination to a person of ordinary skill in

the art, the apparatus resulting from a combination of JP '862 and Eaton would be different from that of the present application.

With regard to Wada, Applicant submits that although this reference discloses an apparatus and method for polishing wafers, the apparatus disclosed therein does not have means for, nor does the method provide steps for, pressurizing and feeding the slurry; nor does the apparatus have means for, or the method provide steps for, adjusting the amount of slurry fed to each slurry hole, including the option of completely shutting off flow to certain predetermined selected slurry holes. Therefore, even if the apparatus of Wada were combined with that of JP '862, and there is nothing in either of the references themselves that would suggest such a combination to a person of ordinary skill in the art, the apparatus resulting from a combination of JP '862 and Wada would be different from that of the present application.

For the foregoing reasons, Applicant respectfully submits that the apparatus and method of the present application are not obvious over JP '862 in combination with any one or more of Hu, Eaton, or Wada, and that the 35 U.S.C. 103(a) rejection of claims 1 - 10 should be withdrawn. Applicant further submits that this rejection is similarly not applicable to any of new claims 11 - 20 submitted herewith, and should not be applied by the Examiner to any of those claims.

Reconsideration and further examination of the application after entry of this Amendment is respectfully requested.

The addition of new claims 11 - 20 represents the addition of one independent claim over and above the claims previously paid for (i.e., three (3) independent claims and a total of twenty (20) claims paid for and included in the application filing fee). Previous claims 1 - 10 represented two (2) independent claims and a total of ten (10) claims. New claims 11 - 20 represent a further two (2) independent claims and ten (10) total additional claims, so that after entry of this Amendment, there are four (4) independent claims and a total of twenty (20) claims pending in the application. Please charge the fee of \$100.00 for one additional independent claim to Deposit Account 10-1250. Applicant continues to have Small Entity status.

Applicant respectfully requests a two month extension of time for responding to the Office Action. Please charge the fee of \$225.00 for the extension of time to Deposit Account No. 10-1250. Applicant continues to have Small Entity status.

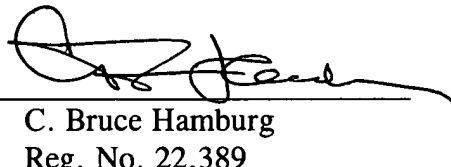
In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

No other fees are believed due with the filing of this Amendment. If, however, any additional fees should be due, or if Applicant is entitled to a refund of any previously made overpayments, they should be respectively charged and credited to Deposit Account No. 10-1250.

Respectfully submitted,

JORDAN AND HAMBURG LLP

By

A handwritten signature in black ink, appearing to read 'C. Bruce Hamburg', is written over a horizontal line. A long, thin, curved line extends from the end of the signature to the right.

C. Bruce Hamburg
Reg. No. 22,389
Attorney for Applicants

Jordan and Hamburg LLP
122 East 42nd Street
New York, New York 10168
(212) 986-2340